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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/042,811	01/08/2002	Charles A. Dark	072219-0278262 (P05109)	7599

33402 7590 05/28/2003

LAW OFFICES OF MARK C. PICKERING
P.O. BOX 300
PETALUMA, CA 94953

EXAMINER

NGUYEN, JOSEPH H

ART UNIT	PAPER NUMBER
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2815

DATE MAILED: 05/28/2003

10

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/042,811

Applicant(s)

DARK ET AL.

Examiner

Joseph Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 16-30 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 16-30 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 08 January 2002 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Election/Restrictions

Applicant's election without traverse of claims 16-20 in Paper No. 9 is acknowledged. Therefore, claims 16-20, new claims 21-30 are prosecuted whereas claims 1-15 have been cancelled.

Drawings

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the limitation of "a first layer of dielectric material formed on the first section, the second section and the third doped region" in claim 16 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 16-20 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to

which it pertains, or with which it is most nearly connected, to make and/or use the invention. The limitation of "a first layer of dielectric material formed on the first section, the second section and the third doped region" in claim 16 is not disclosed in a way one of ordinary skill in the art can make and use.

Claims 17-20 are also rejected due to their dependency upon the rejected base claim 16 above.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 16, 21-30 are rejected under 35 U.S.C. 102(b) as being anticipated by Vinal.

Regarding claim 16, Vinal discloses on figure 1 an anti-fuse formed on a first semiconductor material 21 of a first conductivity type, the anti-fuse comprising a well 22 formed in the first semiconductor material, the well having a surface, a second conductivity type, and a dopant concentration; a first doped region 23 of the second conductivity type formed in the well, the first doped region having a dopant concentration that is greater than the dopant concentration of the well; a second doped region 33a of the first conductivity type formed in the well, the second doped region being spaced apart from the first doped region; a third doped region 24 formed in the

well, the third doped region being spaced apart from the first and second doped regions; a layer of insulation material 41, 42 formed on the surface of the well, the layer of insulation material having a first opening (see element 31) that exposes the first doped region of the well, a second opening (see element 34) that exposes the second doped region of the well, and a third opening (see element 32) that exposes the third doped region of the well; a first section of a second semiconductor material 31 formed on the layer of insulation and the first region; a second section of the second semiconductor material 34 formed on the layer of insulation material and the second region, the second section being spaced apart from the first section; and a first layer of dielectric material formed on the first section, the second section and the third doped region.

Regarding claim 21, Vinal discloses on figure 1 an anti-fuse formed on a semiconductor material 21 of a first conductivity type, the anti-fuse comprising a well 22 formed in the semiconductor material, the well having a surface, a second conductivity type, and a dopant concentration; a first doped region 23 of the second conductivity type formed in the well, the first doped region having a dopant concentration that is greater than the dopant concentration of the well; and a second doped region 33a of the first conductivity type formed in the well, the second doped region being spaced apart from the first doped region.

Regarding claim 22, Vinal discloses on figure 1a third doped region 24 formed in the well between the first and second doped regions 23, 33a; a metallic layer 34 formed on the third doped region; and a layer of insulation material 42 formed on the metallic

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layer, the layer of insulation material being free of a conductive material that extends through the layer of insulation material and contacts the metallic layer.

Regarding claims 23-30, Vinal discloses on figure 1 all the structures set forth in the claimed invention.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 17-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Vinal as applied to claim 16 above, and further in view of Etou et al.

Regarding claim 17, Vinal discloses on figure 1 substantially all the structures set forth in the claimed invention except a first layer of silicide formed on the first polysilicon region. However, Etou et al discloses on figure 2B a first layer of silicide 31 formed on the first polysilicon region 34. In view of such teaching, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Vinal by having a first layer of silicide formed on the first polysilicon region for the purpose of improving the current flow within a semiconductor device.

Regarding claims 18-20, Vinal and Etou et al together disclose all the structures set forth in the claimed invention.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

US Patent 6404026 B1 to Tsuyuki discloses a semiconductor device.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joseph Nguyen whose telephone number is (703) 308-1269. The examiner can normally be reached on Monday-Friday, 7:30 am- 4:30 pm

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eddie Lee can be reached on (703) 308-1690. The fax phone numbers for the organization where this application or proceeding is assigned is (703) 308-7382 for regular communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

JN
May 15, 2003

A handwritten signature in black ink, appearing to read 'Eddie Lee', with a stylized, flowing script.

**EDDIE LEE
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800**